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A NEW SUBSPECIES OF THE EASTERN
PIPISTRELLE FROM FLORIDA

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During a recent study of the eastern pipistrelle, *Pipistrellus subflavus*, it became evident that there exists in peninsular Florida and southeastern Georgia an undescribed subspecies of this bat.

Many of the specimens used in this study were borrowed and examined at Urbana. I wish to thank the individuals in charge of the collections for the loan of their material. Collections from which specimens were borrowed, and abbreviations used in this paper to designate these collections, are as follows: American Museum of Natural History (AMNH), University of Connecticut (UC), Cornell University (CU), Florida State Board of Health (FSBH), University of Florida (UF), University of Georgia (UG), Museum of Comparative Zoology, Harvard University (MCZ), University of Michigan, Museum of Zoology (UM), H. B. Sherman Collection (HBS), and U. S. National Museum (USNM).

The new race may be named and described as follows:

Pipistrellus subflavus floridanus new subspecies

Type.—Male, adult, skin and skull, no. 163884 American Museum of Natural History; from Homosassa Springs, at head of Homosassa River, Citrus County, Florida; collected on February 9, 1951, by W. Schaldach and J. P. Chapin; original no. 1474.

Range.—Peninsular Florida and southeastern Georgia. Known from as far south as Bassenger, Okeechobee County, Florida, and ranging northward at least to five miles west of Ludowici, Long County, Georgia. This is the pipistrelle found commonly outside the caves in peninsular Florida.

Diagnosis.—A race of *Pipistrellus subflavus* characterized by complete absence of reddish tones to the fur. Color varies from a pale yellow to chocolate brown and silvery-gray. Base of hair brown or black; subterminal band yellowish or gray; terminal band chocolate brown or black; tips of guard hairs silvery. Size large.

Comparisons.—Since the range of this race borders upon only that of *P. s. subflavus*, it needs comparison with that form only. As compared with a series of 24 specimens taken from Waterfall Cave, 7 mi. N Cairo, Grady County, Georgia, on February 5, 1955, *floridanus* differs

markedly in color. The basal band of the hair is similar in the two races. The subterminal band in *subflavus* is a light orange or reddish in color, whereas in *floridanus* it is white to a pale yellow, and lacking entirely in reddish hues. The terminal band is a dark reddish brown in *subflavus*; in *floridanus* this band ranges from brown to black in color. The tips of the guard hairs of *subflavus* are orange in color in contrast to the pale yellow or silver of *floridanus*.

In size *P. s. floridanus* does not differ from *P. s. subflavus* from the Atlantic seaboard, but is slightly larger than those from the Ohio River Valley. Compared with large series (30 or more) from the vicinity of Huntington, West Virginia; Carter Cave, Kentucky; Rosiclare, Illinois; and Adair County Bat Cave, Oklahoma, it is slightly larger in all measurements except length of the tooththrow. It is not larger than the average of a large series from the vicinity of Washington, D. C.

Remarks.—Since the type locality of *Pipistrellus subflavus* is known only as Georgia ("de Géorgie"), and two subspecies occur within the state, we are faced with the problem of determining which is the nominal form. In Cuvier's (1832) original description he states that, "Les parties supérieures du corps sont d'un blond gris clair, légèrement ondulées de brunâtre; les parties inférieures d'un blanc jaunâtre; les poils des parties supérieures sont noirs à leur base, blanchâtres dans la plus grande partie de leur longueur, et brunâtres à leur pointe; . . .". Although this description seems best to fit that race which inhabits the Okefenokee Swamp (in that the colors of gray, brown, and yellow, but not red, are mentioned), one cannot be sure which form Cuvier has described, since the type has apparently been lost (Rode, 1941, does not list it in the catalogue of types in the National Museum of France). A specimen from the locality from which the type of *P. s. subflavus* most likely came (the LeConte Plantation, 3 mi. SW Riceboro, Liberty County, Georgia; University of Illinois, Museum of Natural History no. 16177; taken by W. L. Jennings, July 4, 1957) more closely resembles the reddish form (*subflavus*) than it does that race found in peninsular Florida (*floridanus*). Unfortunately, the LeConte Plantation seems to be an area of intergradation between the two subspecies.

The race *P. s. floridanus* seems to be partially separated ecologically from *P. s. subflavus*. The former apparently does not inhabit caves. A series of 11 specimens taken from Old Indian Cave, Jackson County, in northwestern Florida, is separable one hundred per cent from *floridanus*. These are typical *subflavus*, and none approaches the color characteristic of *floridanus*. Five of these specimens were taken on May 9, and six on December 11, 1954. Of the 24 specimens taken from Waterfall Cave, which is in extreme southwestern Georgia, in February, only two show any approach to the color of *floridanus*. These two are separable from this race, however, in that they have more reddish tones to the fur than any of the *floridanus* examined.

It would be interesting to study specimens from the caves of Alachua County, Florida, to determine which race occurs there. Pipistrelles are common winter residents in these caves. This is within the range of *floridanus*, which can be found in an active state in winter in the same region. It is quite possible that those wintering in the caves of the southern United States have moved in from the north, and both races might occur in the same region at that time.

The summer range of *floridanus* is not well defined. One specimen shot at Birdsong Plantation, 4 mi. S Beachton, Grady County, Georgia, on May 6, 1954, is typical *subflavus*. This locality is in extreme southwestern Georgia, Only 130 miles from Gulf Hammock, Florida, where *floridanus* is a common permanent resident. Apparently intergradation must take place somewhere between these localities, although the specimen from Birdsong Plantation may have been a transient.

A specimen of a pipistrelle taken from Roswell, Gwinnett County, Georgia, north of Atlanta, and one from St. George Island, St. Marys County, Maryland, are inseparable from *floridanus*. These were the only specimens examined (out of more than 1000) from outside the range of this race which were not recognizable as being distinct and separable. Typical *subflavus* were taken from both localities at the same time. Since both of the above were taken in August, at which time it is known that some birds, and perhaps also bats, wander northward, it could well be that these two specimens are *floridanus*.

Measurements.—Average measurements in millimeters of three adult males from the type locality are: total length 86; length of tail 39; length of foot 9.7; length of ear 13; length of tibia 13; length of forearm 33; length of third metacarpal 32; length of fifth metacarpal 31; greatest length of skull 13.1; zygomatic breadth 7.9; breadth of cranium 6.6; height of cranium 6.0; and alveolar length of maxillary toothrow 4.1.

Specimens examined.—Total number 164, from the following localities: GEORGIA: *Long County*: 5 mi. W Ludowici, 1 (UG); *county unknown*: Okefenokee Swamp, Billy's Island, 5 (CU); Okefenokee Swamp, Chesler's Island, 1 (CU); FLORIDA: *Hamilton County*: 1 (FSBH); *Columbia County*: 4 (FSBH); *Baker County*: 1 (FSBH); *Taylor County*: 6 (FSBH); *Bradford County*: 1 (FSBH); *Clay County*: 6 (FSBH); *Dixie County*: 2 (FSBH); *Gilchrist County*: 1 (FSBH); 4 mi. E Trenton, 2 (UF); *Alachua County*: 30 (FSBH); 8 mi. NW Gainesville, 10 (UF); 2 mi. E Gainesville, 1 (UC); 5 mi. E Gainesville, 5 (HBS), 3 (UF); 6 mi. E Gainesville, 1 (UM); *Putnam County*: 6 (FSBH); *Levy County*: 9 (FSBH); Gulf Hammock, 1 (UF); Waccasassa River, 2 mi. N Gulf Hammock, 2 (AMNH); *Marion County*: 20 (FSBH), Blitche's Ferry, 10 mi. E Ocala, 2 (MCZ); *Citrus County*: 1 (FSBH); Homosassa Springs, at head of Homosassa River, 3 (AMNH); *Sumter County*: 36 (FSBH); *Orange County*: 1 (FSBH); Lake Underhill, Orlando, 1 (USNM); *Pasco County*: 1 (FSBH); *Polk County*: Winterhaven, 1 (UF); *Okeechobee County*: Bassenger, 1 (AMNH).

Literature Cited

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